INDIA SPACE WEEK

WORKSHOP

ADVANCED DRONE (AIR TAXI)

Session by - BITS, IITs, Oxford, MIT Alumni.

India Space Week

Space , Science, Computing & Technology

Mission: Our mission is to bring space knowledge to grassroots levels, inspiring students to become future space leaders.
Vision: Establish a comprehensive ecosystem through centralized - Workshops, Mobile Planetarium, Space Fest, Events, Competitions, Mobile labs, Museums, Online and offline courses and impactful assessments.

Components:

- Cutting-edge equipment showcasing space exploration technology.
- Immersive experiences via virtual reality and interactive exhibits.
- Inspirational stories of space pioneers.
- Facility development programs for teachers from each district.

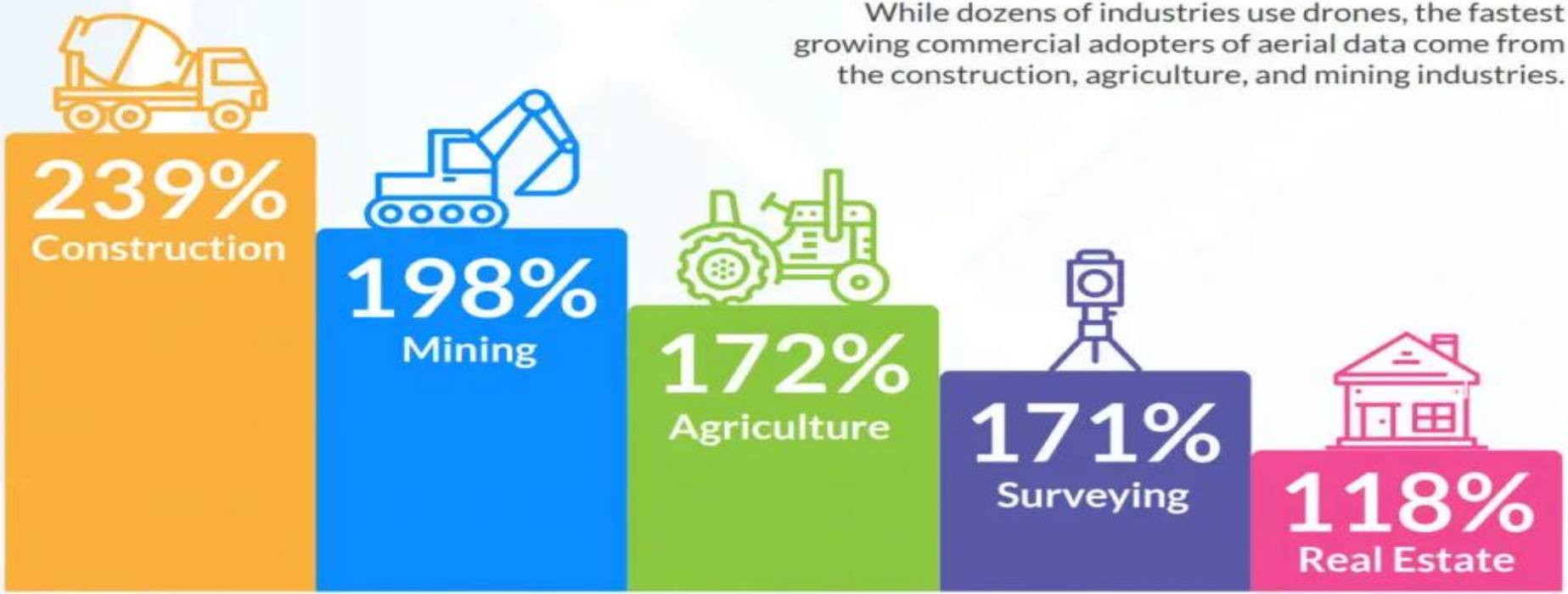
ADVANCED DRONE

Why we chose this area of Technology

An **uncrewed aerial vehicle** (**UAV**), commonly known as a **drone**, is an aircraft without any human pilot, crew, or passengers on board.

More than $500 billion, this is the staggering revenue number forecast for the drone business by 2030. And, given its current rate of development, we can believe that this prediction will come true.

Drones, perform duties ranging from the ordinary to the extremely deadly. These robot-like aircrafts can be seen rescuing avalanche victims as well as delivering groceries to your house — and almost everywhere in between.


Growth in Industry Adoption (YoY)
While dozens of industries use drones, the fastest growing commercial adopters of aerial data come from the construction, agriculture, and mining industries.
239%
Construction
198%
Mining
172%
Agriculture
171%
Surveying
118%
Real Estate

GROWTH

Advanced Drone Technology

*Examine the integration of artificial intelligence in drones.

*Discuss the development of multi-sensor integration for enhanced data collection.

* Learning Pointers:
*Introduction to AI's role in autonomous drone navigation.

*Explore multi-sensor systems that enhance operational capabilities.

Engineering Principles of UAV Design

* Explore the impact of aerodynamics on drone efficiency.
* Review the materials and technologies used in lightweight drone design.
* Learning Pointers:
* Analysis of different materials used for drone frames and their properties.
* Understanding how aerodynamic design influences drone stability and speed.

Key Learning Outcome

Gain an overview of cutting-edge drone technologies and their implications for various industries.

Regulatory & Ethical Considerations

Recognize the importance of ethical considerations and legal compliance in drone operations.

* Discuss the international regulatory landscape for drones.

* Explore ethical considerations surrounding drone usage, focusing on privacy issues.

* Learning Pointers:

* Overview of DGCA, and FAA regulations and their impact on drone operations.

* Ethical debates surrounding drone surveillance and data collection.

Hands-on Drone Programming & Simulation

* Introduction to programming drones using Python and ROS.

* Engage in simulation exercises to program and test drone behaviors.

* Learning Pointers:

* Step-by-step guide on basic drone programming.

* Use of simulation software to understand flight dynamics.

Real-World Applications & Case Studies

* Discuss drones' role in precision agriculture for monitoring and crop management.
* Examine drones in emergency response, focusing on search and rescue operations.
* Learning Pointers:
* Case studies on drones in disaster management.
* Analysis of UAV deployment in agriculture for optimizing resource use.

Future of Drones in AI & Automation

Explore how AI is transforming drones into more autonomous, efficient systems.

* Look at the future integration of AI with drones for autonomous decision-making.

* Explore the development of swarm drone technologies for collaborative operations.

* Potential uses of AI in enhancing drone functionalities.

* Concepts of swarm intelligence and its applications in drones.

Interactive Q&A and Discussion

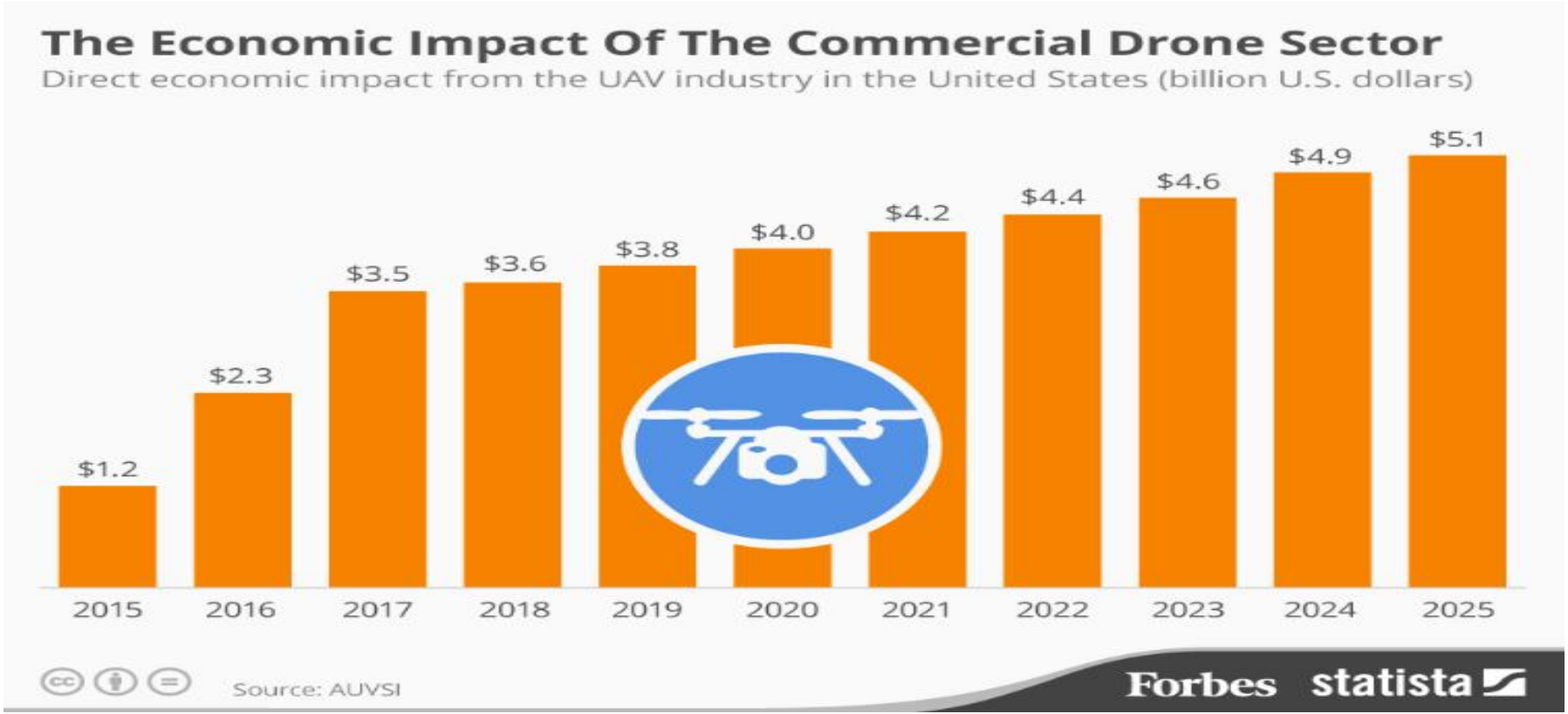
Engage students in a lively discussion to address their questions and explore topics in depth.

Opportunity for students to clarify doubts and discuss innovative ideas in drone technology.

Some facts about Drone sector in India

Drone Market Shows Incredible Growth with 22.15% CAGR.

India Drone Market Size Set Expands at Significant CAGR of 22.15% During 2024–2030 to Reach USD 4.87 Billion by 2030.


The Economic Impact Of The Commercial Drone Sector
Direct economic impact from the UAV industry in the United States (billion U.S. dollars)
$1.2
$2.3
$3.5
$3.6
$3.8
$4.0
$4.2
$4.4
$4.6
$4.9
$5.1
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Source: AUVSI
Forbes
statista

IMPACTS

Drone Technology 2024

Drone technology in 2024 means staying ahead of the curve and being a part of this transformative journey.

Online Advanced Drone Workshop

This workshop will be conducted by graduates like BITS,IITs, Oxford University, University of MIT, who have notable experience working with organizations such as CSIR and DRDO.

INDIA SPACE WEEK

grants and certifies this certificate on

May, 2024

Volunteer Certificate

This Certificate Is Given To

As a volunteer of our Workshop from ..... to ..... date. During this service, we found him/her a hardworking and dedicated person. We wish him a brilliant and successful career in his/her life.

INDIA SPACE WEEK

India Space Week

Noida International University

Volunteering Certificate

Certificate for Faculty members

Thank you
For your time and consideration!

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